<u>Amendments to the Claims:</u>

This listing of the claims will replace all prior versions and listings of claims in the application:

<u>Listing of Claims:</u>

1 (Currently Amended): A fuel cell system comprising:

a fuel cell stack comprising a plurality of fuel cells stacked in series;

wherein the fuel cells comprise a first fuel cell disposed in a center position of the fuel cell stack with respect to a stacking direction of the fuel cells, and a second fuel cell disposed in a position other than the center position <u>with respect to the stacking direction of the fuel cells</u>, the second fuel cell being arranged to have a larger moisture absorption capacity than the first fuel cell.

2 (Previously Presented): The fuel cell system as defined in Claim 1, wherein each of the fuel cells comprises an anode to which hydrogen is supplied, a cathode to which air containing oxygen is supplied, and a electrolyte membrane formed of a moisture-absorbing material which conducts hydrogen ions from the anode to the cathode, and the electrolyte membrane of the second cell is formed to have a larger moisture absorption capacity than the electrolyte membrane of the first cell.

3 (Previously Presented): The fuel cell system as defined in Claim 1, wherein each of the fuel cells comprises an anode to which hydrogen is supplied, a cathode to which air containing oxygen is supplied, and a electrolyte membrane formed of a moisture-absorbing material which conducts hydrogen ions from the anode to the cathode, and the cathode of the second cell is formed to have a larger moisture absorption capacity than the cathode of the first cell.

4 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a humidifier which humidifies air supplied to the fuel cells and a programmable controller programmed to control the humidifier to suppress the humidification of the air supplied to the fuel cells before the fuel cell system stops operating.

5 (Previously Presented): The fuel cell system as defined in Claim 4, wherein the fuel cell system further comprises a sensor which detects a parameter related to the moisture content of the fuel cells, and the controller is further programmed to determine the moisture content of the fuel cells from the parameter, and to make the humidification suppression time longer, the larger is the moisture content of the fuel cells.

6 (Previously Presented): The fuel cell system as defined in Claim 4, wherein the fuel cell system further comprises a humidifier which humidifies hydrogen supplied to the fuel cells, and the controller is further programmed to control the humidifier to suppress the humidification of the hydrogen supplied to the fuel cells before the fuel cell system stops operating.

7 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a humidifier which humidifies air supplied to the fuel cells, a sensor which detects a temperature of the fuel cell stack and a programmable controller which controls the humidifier, wherein the controller is programmed to supply air to the fuel cells while suppressing humidification of air by the humidifier, when the temperature of the fuel cell stack reaches a predetermined low temperature region after the fuel cell system stops operating.

8 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises an electrical circuit which adjusts an output current of the fuel cell stack, a sensor which detects a temperature of the fuel cell stack and a programmable controller programmed to control the electrical circuit to maintain the output current of the fuel cell stack at

a constant current when the temperature of the fuel cell stack is in a predetermined low temperature region when the fuel cell system starts up.

9 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a purge device which purges residual moisture in the second cell, a sensor which detects a temperature of the fuel cell stack and a programmable controller programmed to operate the purge device so that the moisture content of the second cell is less than the moisture content of the first cell when the temperature of the fuel cell stack is in a predetermined low temperature region.

10 (Previously Presented): The fuel cell system as defined in Claim 9, wherein the purge device is a device which adjusts one of a pressure, a flowrate, a humidification degree, a temperature and a supply time of the air supply to the second cell.

11 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a first humidifier which humidifies air supplied to the first cell, a second humidifier which humidifies air supplied to the second cell, a sensor which detects a temperature of the fuel cell stack and a programmable controller programmed to control the first humidifier and second humidifier so that the humidity of the air supplied to the second cell is higher than the humidity of the air supplied to the first cell when the temperature of the fuel cell stack is equal to or higher than a predetermined temperature when the fuel cell system starts up.

12 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a first humidifier which humidifies air supplied to the first cell, a second humidifier which humidifies air supplied to the second cell, a voltage sensor which detects an output voltage of the fuel cell stack and a programmable controller programmed to control the first humidifier and second humidifier so that the humidity of the air supplied to the

first cell is higher than the humidity of the air supplied to the second cell when the output voltage of the fuel cell stack is equal to or greater than a predetermined voltage.

13 (Previously Presented): The fuel cell system as defined in Claim 1, wherein the fuel cell system further comprises a first humidifier which humidifies air supplied to the first cell, a second humidifier which humidifies air supplied to the second cell and a programmable controller programmed to control the first humidifier and second humidifier to decrease the humidity of the air supplied to both the first cell and second cell at a predetermined interval in a state where the humidity of the air supplied to the second cell is lower than the humidity of the air supplied to the first cell.

14 (Previously Presented): A fuel cell stack generating electric power through electrochemical reaction of hydrogen and oxygen, comprising:

a plurality of fuel cells stacked in series, each of the fuel cells comprising an anode to which hydrogen is supplied, a cathode to which air containing oxygen is supplied, and an electrolyte membrane which conducts hydrogen ions from the anode to the cathode;

wherein the fuel cells comprise a first cell disposed in a center position of the fuel cell stack with respect to a stacking direction of the fuel cells, and a second cell disposed in a position other than the center position, the second cell being arranged to have a larger moisture absorption capacity than the first cell.

15 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the electrolyte membrane comprises a moisture-absorbing material, and the electrolyte membrane of the second cell has a larger thickness in the stacking direction than the electrolyte membrane of the first cell.

16 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the electrolyte membrane comprises a moisture-absorbing material, and the electrolyte membrane of the second cell has a larger ion exchange group equivalent weight than the electrolyte membrane of the first cell.

17 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the second cell comprises a substrate material, and a moisture-absorbing material mixed with the substrate material.

18 (Original): The fuel cell stack as defined in Claim 17, wherein the moisture-absorbing material is a material selected from a group comprising hygroscopic inorganic porous particle moisture-absorbing resins comprising silica gel, synthetic zeolite, alumina gel, titania gel, zirconia gel, yttria gel, tin oxide and tungsten oxide.

19 (Original): The fuel cell stack as defined in Claim 17, wherein the moisture-absorbing material is a material selected from a group comprising a crosslinked polyacrylate, starch-acrylate graft copolymer cross-linked material, Poval polymer resin, polyacrylonitrile polymer resin and carboxymethylcellulose polymer resin.

20 (Previously Presented): The fuel cell stack as defined in Claim 17, wherein the substrate material is the electrolyte membrane of the second cell, and the moisture-absorbing material is mixed with the electrolyte membrane within a weight range of 0.01 % to 30 % relative to a weight of the electrolyte membrane.

21 (Previously Presented): The fuel cell stack as defined in Claim 17, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer which diffuses oxygen in the air into the catalyst layer, the substrate material is the cathode gas diffusion layer of the second cell, and the moisture-absorbing material is mixed

with the cathode gas diffusion layer within a weight range of 0.01 % to 30 % relative to a weight of the cathode gas diffusion layer of the second cell.

22 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer formed of a moisture-adsorbing material which diffuses oxygen in the air into the catalyst layer, and the cathode gas diffusion layer of the second cell has a larger thickness in the stacking direction than the cathode gas diffusion layer of the first cell.

23 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer formed of a moisture-adsorbing material which diffuses oxygen in the air into the catalyst layer, and the cathode gas diffusion layer of the second cell has a larger specific surface than the cathode gas diffusion layer of the first cell.

24 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the anode, the cathode and the electrolyte membrane are formed of a one-piece membrane electrode assembly coated with a polymer solution, and the membrane electrode assembly of the second cell has a larger polymer solution coating amount than the membrane electrode assembly of the first cell.

25 (Previously Presented): The fuel cell stack as defined in Claim 24, wherein the polymer solution contains a perfluorocarbon sulfonic acid.

26 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer with numerous pores which diffuse oxygen in the air into the catalyst layer, and

the pores of the cathode gas diffusion layer of the second cell have a larger diameter than the pores of the cathode gas diffusion layer of the first cell.

27 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer which diffuses oxygen in the air into the catalyst layer, and the cathode gas diffusion layer of the second cell is formed of a material having a larger contact angle with moisture than the cathode gas diffusion layer of the first cell.

28 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane and a cathode gas diffusion layer which diffuses oxygen in the air into the catalyst layer, the cathode gas diffusion layer comprising carbon paper coated with moisture repelling material, and the carbon paper of the cathode gas diffusion layer of the second cell has a larger amount of moisture repelling material than the carbon paper of the cathode gas diffusion layer of the first cell.

29 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the fuel cell stack comprises plural end cells which have a progressively increasing moisture-absorbing capacity with increasing distance from the center cell.

30 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane, and the catalyst layer of the second cell has a larger thickness in the stacking direction than the catalyst layer of the first cell.

31 (Previously Presented): The fuel cell stack as defined in Claim 14, wherein the cathode comprises a catalyst layer in contact with the electrolyte membrane, and the catalyst layer of the second cell has a larger specific surface than the catalyst layer of the first cell.

32 (Currently Amended): A fuel cell stack which generates power by an electrochemical reaction between hydrogen and oxygen, comprising:

a plurality of fuel cells stacked in series, each of the fuel cells comprising an electrode and a gas passage facing the electrode;

wherein the fuel cells comprise a first cell disposed in a center position of the fuel cell stack in the stacking direction of the fuel cells, and a second cell disposed in a position other than the first cell <u>with respect to the stacking direction of the fuel cells</u>, and the gas passage of the second cell has a larger cross-sectional area than the gas passage of the first cell.

33 (Currently Amended): The fuel cell stack as defined in Claim 32, wherein a gas supply flowrate to the gas passage of the second cell is set to be larger than a gas supply flowrate to the gas passage of the first cell<u>.</u>